

Interactive comment on “NORPERM, the Norwegian Permafrost Database – a TSP NORWAY IPY legacy” by H. Juliussen et al.

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General Comments

The Norwegian Permafrost Database (NORPERM) provides open access to a large number of unique permafrost temperature data measured near the surface or in boreholes during IPY. It is the first open access permafrost database available and acts as a role model concerning the kind of data presented, access to the data, and the data policy. The data presented (and particularly the intended extension to larger areas and longer time series) are of great value not only for the permafrost research community, but also for all kind of climate and environment monitoring and observation. The data are easy accessible via the NORPERM database, which comes along with a self-explanatory and well-functioning user interface. Here data can be viewed or down-

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loaded and metadata are accessible. Although data acquisition is done using common measurement equipment in permafrost research and the metadata follow GTN-P standards and seem to be complete, the article to support publication of the data does not include a thorough discussion of the quality and limitations of the data presented (see more detailed comments below). In addition, I have a number of other comments on the manuscript. They are outlined below.

Section 1

Where can the CALM data be found in the database? Is it included? This is not clear for me from the text.

Section 2

Section two basically gives rather technical information on measurement locations and installations, but not on the data itself. As I understand ESSD, the main purpose it to present/publish the data. Therefore the data sets should be better described.

If the observatory design is described, two fundamental aspects need to be addressed, but are lacking in the manuscript: What parameter is measured in order to obtain or deduce which information? And what are the criteria for the selection of the sites where these parameters are measured (climate conditions is the only criteria mentioned, but factors such as (sub)surface conditions or snow cover distribution are as important for permafrost temperatures)? The observatory design depends of course on the main aim of the TSP Norway project but it is very clear from the text (long-term monitoring? Snapshot? Process studies? Best spatial coverage? All together?).

Section 3

In my opinion, the authors must include a discussion on the data quality and the limitations of the data, which is listed as one of the main requirements of ESSD. There are two short paragraphs (p. 38 and 39), but they do not sufficiently describe how the data has been processed and quality checked between the logger and the output of the database. This information is not accessible in the metadata, either, but it is crucial

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to know when dealing with permafrost temperature data. Are there standard routines and quality criteria that are given to the data providers? Is any available data stored? Are gaps filled, errors corrected, or zero-curvature calibrations performed? And if yes, how? How does the NORPERM administrator make sure, data is complete and of high quality? Is there any intention to store raw data as well or to do a versioning to be able to trace back previous versions of the data sets (when NORPERM will be a tool for long-term monitoring, this may become very important)? If it cannot be described comprehensively for the NORPERM dataset, it may be demonstrated and discussed using one or two examples.

It is often not clear if the author speak of the data, the database or the graphical user interface with GIS-functionality and the term NORPERM seems to stand for all three. It should be clearly distinguished between these three terms, because they have different meanings and different implications. E.g., the structural design presented in Section 3.1. mainly relates to spatial scales and map view changes and therefore to the GUI. If the authors relate to the data and database (as stated in the first sentence) they should use e.g., terms of relational data base modeling.

The last paragraph of Section 3 on the different map layers used in the GUI is too long. It is sufficient to describe the data type and source.

Metadata

The metadata should obligatory include information on the last calibration of the measurement sensors (this is mentioned in the text on p.38, but I did not find the information in the actual metadata sheets). Also a contact name or institution (including a contact address) should be given for all data, in order that data users can obtain more detail on the data acquisition, processing, and quality, or give feedback.

Minor Comments

p.31, l. 6 and elsewhere: The reference Christiansen et al. (2010) is in review and should therefore not be used as a single reference, because publication is not assured.

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p.33, l. 14-17: I do not understand the meaning of this paragraph. It can be deleted, except for the first sentence. p.34, l. 23 The term near-ground surface temperatures is generally used for temperatures measured only little below the surface. It should not be used to describe air or snow temperatures. Figures 1 and 2: It would help the reader' orientation to include a smaller map showing the location of the two regions on a continental scale. Figures 3 and 4: The text is sometimes very small and could be magnified.

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